“Water Rescue
Awareness”
for
First Responders

Water Rescues Emergencies

- Are governed by Cal OSHA and NFPA 1670
- Are High Risk / Low Frequency events
- Continue to Injure and kill firefighters every year

Incidents in San Mateo County

- Last year 43 water rescue emergencies occurred in San Mateo County
- These emergencies occurred within the S.F. Bay, Lagoon Systems, Creeks and Swimming Pools
- This year 19 water rescue emergencies have occurred to date
- If you are dispatched to a water rescue emergency today, are you prepared?

Training Overview

- Water Rescue Philosophy
- NFPA and Cal OSHA standards
- Preplanning and Incident Management
- Size-Up, Terminology & Hazard Assessment
- PPE and Rescue Equipment
- First-In Considerations
- Water Rescue Skills & Techniques
- Rescuer and Victim Safety

Water Rescue Philosophy

We need to change our thought process regarding water rescue

- Water rescues and vehicles trapped in flooded waters are not public assists, they are technical rescues requiring specialized training and equipment
- Water rescue is dynamic with no certainties
- Always consider the seven sequential steps, utilizing the lowest risk methods first
- There is no single way to do any kind of rescue

We Keep Killing Ourselves

- 1986-3 Texas Firefighters drown and died trying to rescue a lady who drove into a flooded roadway
  - 2 feet of water, 11 mph, No training,
  - no equipment, in full structural PPE
- 1996-Arizona Firefighter drown and died while attempting to rescue a dead body in a vehicle
  - No risk assessment, 4 feet of water, 17 mph,

Denver Firefighter Swept Away by High Water During Rescue

Five-Hour Search Ends Tragically

- **An exhaustive five-hour search ended late Thursday night when the body of a Denver firefighter (Robert Crump, 37) swept away by high water while helping save a stranded motorist was found in a drainage culvert.**

August 2000

Crump leaves behind a wife and three children, daughters ages 9, 11 and 13.

NFPA 1670 Standard

- *NFPA 1670 Standard on Operations and Training for Technical Rescue Incidents*

- States, The Authority Having Jurisdiction shall establish written operating procedures consistent with one of three operational levels: Awareness, Operations and Technician

“Awareness Level”

- Does not include a manipulative skill component, personnel are not intended to perform in the capacity of rescuers
- The objectives are designed to develop “Knowledge” competencies within the following areas:
- Scene Assessment & Size-Up
- Site Control and Scene Management
- Hazard Recognition and Mitigation Procedures
- Activation procedures for Water Rescue Response

“Operations Level”

- Builds on Awareness Level knowledge, with the primary focus centering on the development of the skills required to safely perform as a rescuer.
- Operations personnel are limited to lower risk tactics.
- They operate in the “Hazard Zone” and are required to wear appropriate PPE and are trained to operate in the IDLH.

- Training Includes:
- Shore and Boat Based Rescues
- Technical Rigging
- Victim Care and Packaging
- Transfer of Incident Information
- Scene Evaluation

“Technician Level”

- Builds on Awareness Level knowledge and Operations Level skills
- The difference is Technician Level rescuers are trained to apply a full range of knowledge and provide the skills necessary to perform “High Risk” tactics at water rescue incidents.

“Cal OSHA”

- Requires all personnel to wear a personal floatation device (PFD) when operating with 10’ of the water, or when there is a potential to fall in the water

Basic Water - First Responder

- Today’s training covers basic Awareness Level information, and three Operations Level skills
- The intent is to provide and develop basic knowledge and skills to safely conduct shore based tactics.

Preplanning and Incident Management

“Preplanning”

- Examine all aspects:
- Potential of Future Problems
- History of Past Problems

- Devise methods of dealing with them safely and effectively

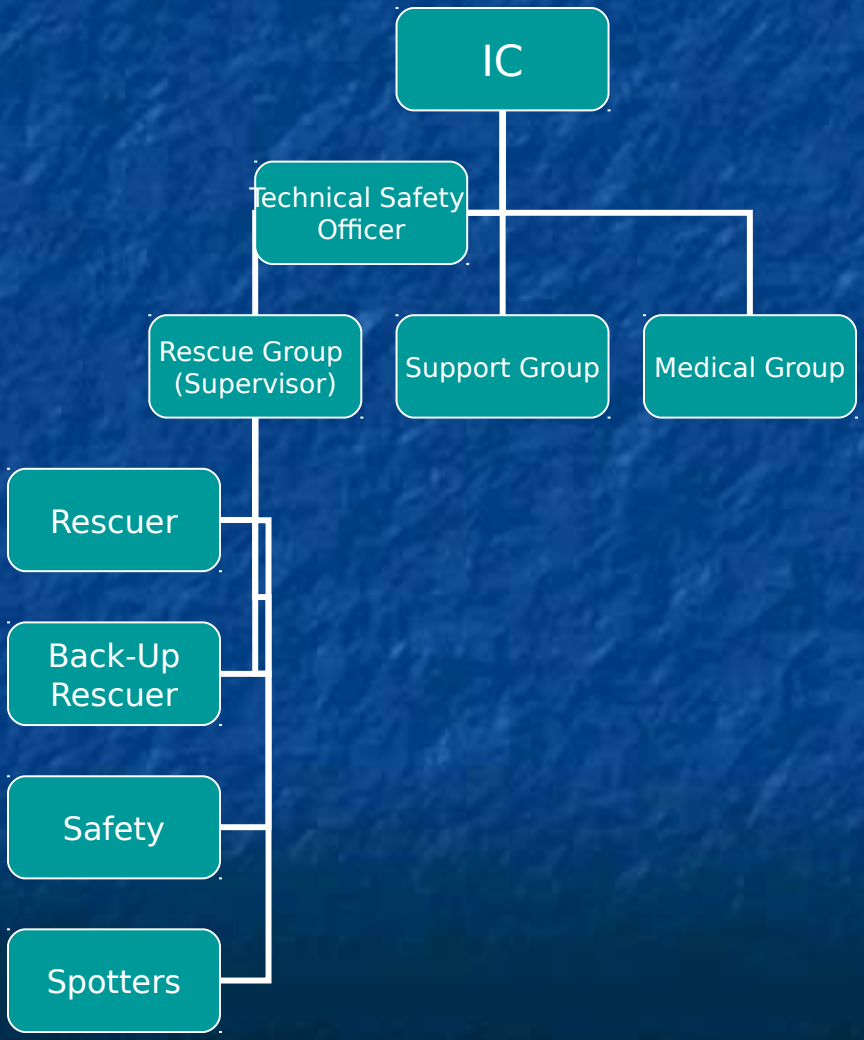
- Information to be gathered may include:
- Location
- Access
- Maps
- Resources (Auto or Mutual Aid)
- Communications
- Equipment and Training Needs

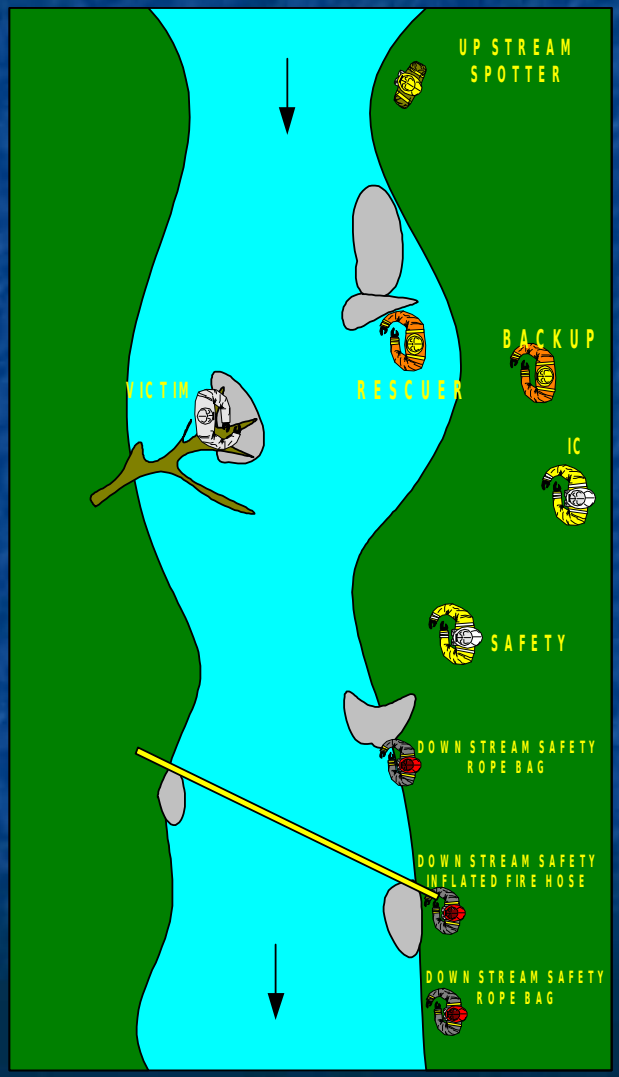
“Incident Management”

- Dealing with a water rescue incident is first a management problem
- Conduct a size-up and hazard assessment
- Isolate and deny entry to shore line
- Assess resource and equipment needs
- Provide safety for rescuers and victim
- Utilize the ICS to identify specific roles or “positions”

- Incident Commander (IC)
- Technical Safety Officer (TSO)
- Rescue Group Supervisor (RGS)
- Rescue Group or Rescuer
- Back-Up Rescue Group or Rescuer
- Spotters
- Support Group
- Medical Group

Assignments





Size-Up, Terminology & Hazard Assessment

“Size-Up”

- Facts – Includes information from preplanning and on scene observations:

  Time of day, number of victims, victim situation, access and egress, past site history, water flow/stage/temp, rescue or recovery

- Probabilities – Determining the probable course of events allows personnel to make:

  Decisions about rescuer and victim safety, resource needs and rescue methods

- Own Situation – What options are available with existing resources?

  Talk, Reach, Throw, Wade, Row, Go, or specialized resources (Helo, Tech Rescue Team)

- Decisions – Choose an option

  Compile information from Facts, Probabilities and Own Situation

- Plan of Operation – Implement the option

  Plan ahead and have a contingency plan

“Still Water”

Size-Up

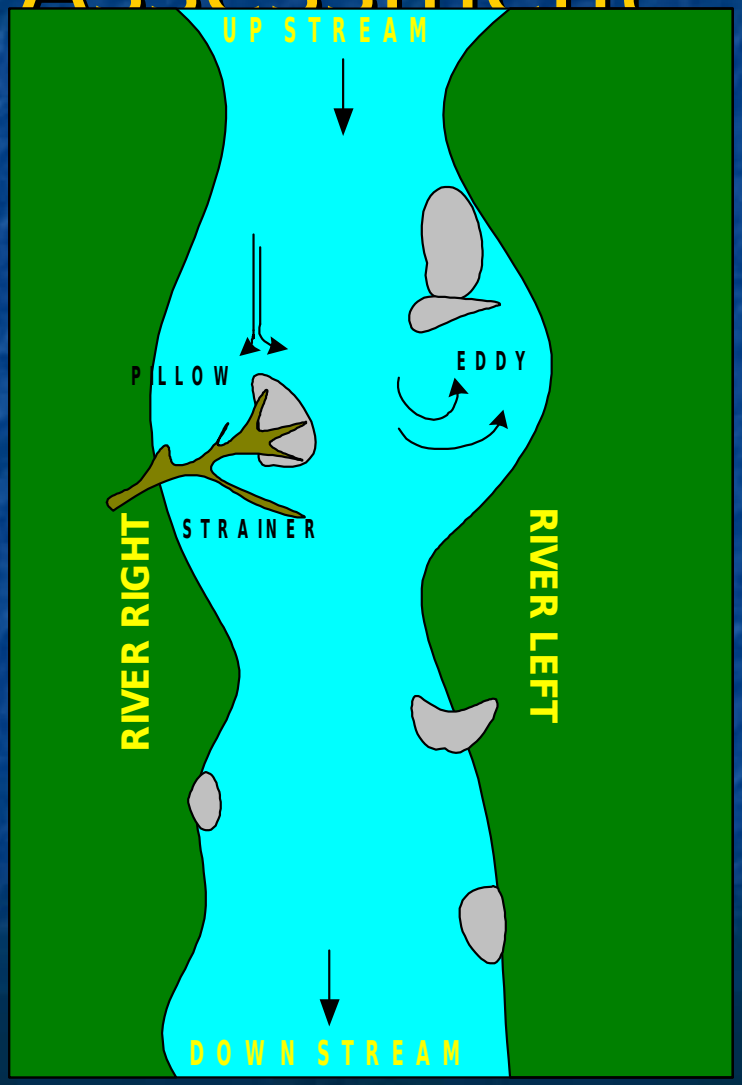
“S.F. Bay”

Size-Up

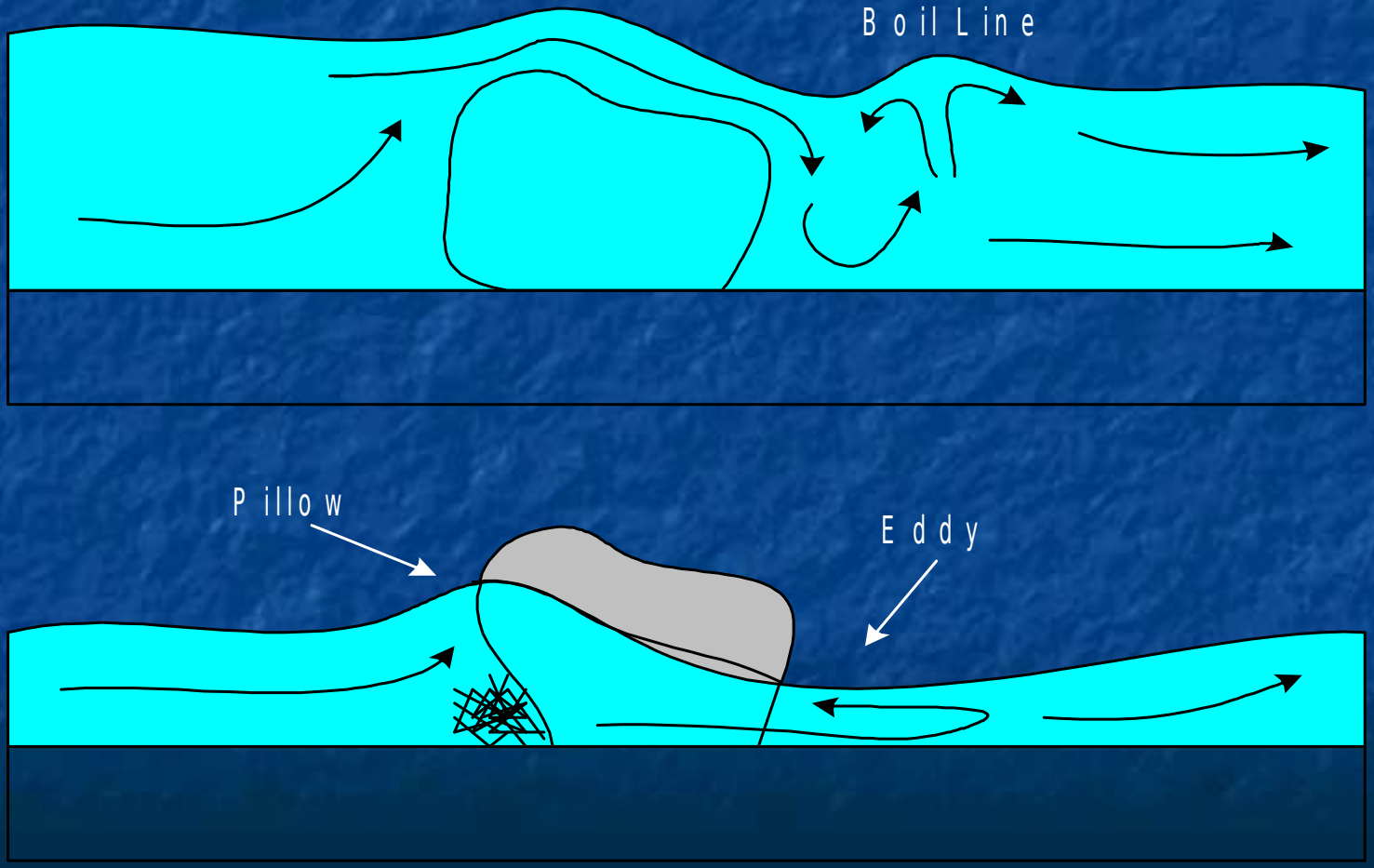
“Swiftwater”

Size-Up

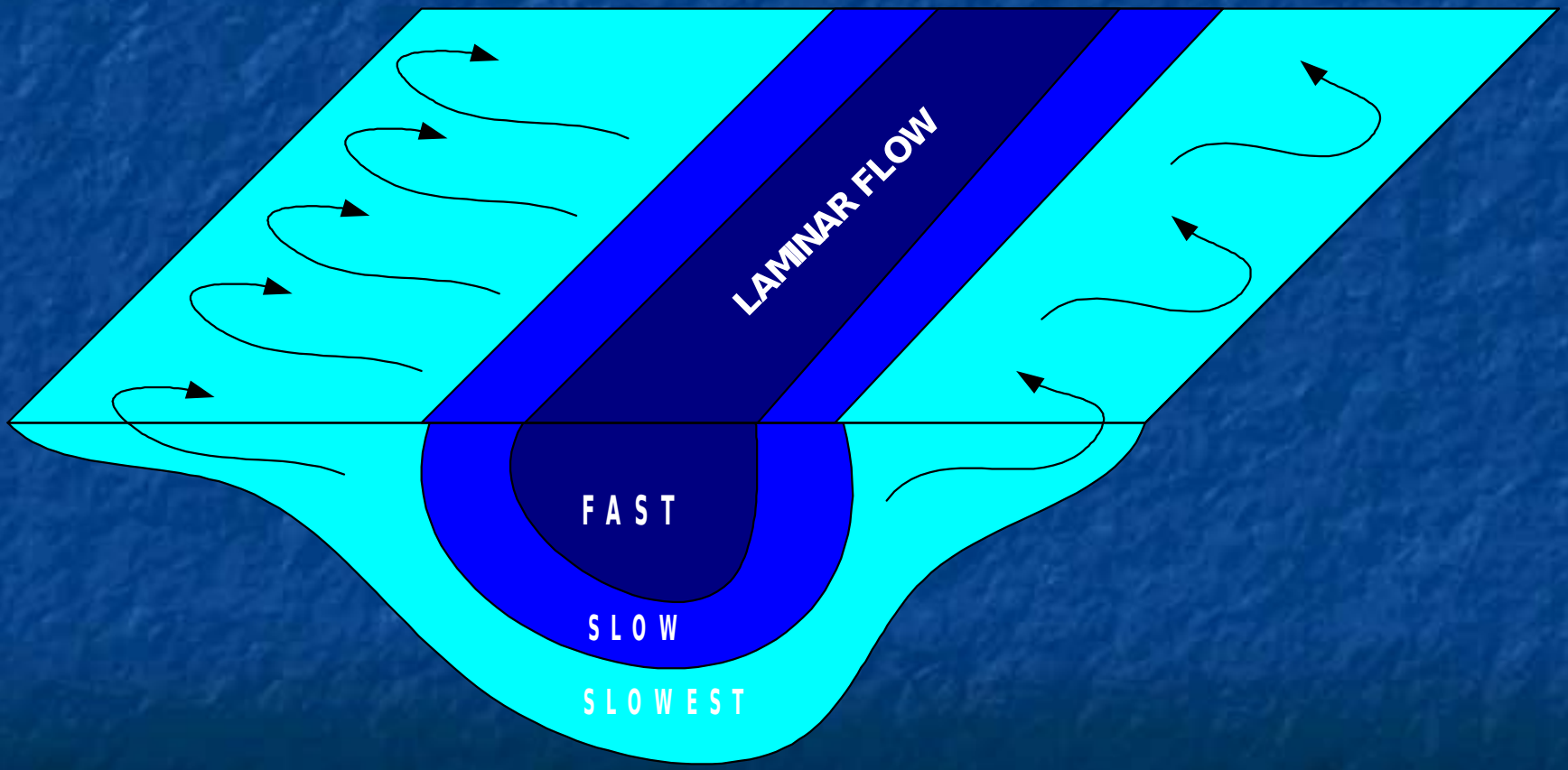
Terminology & Hazard Assessment



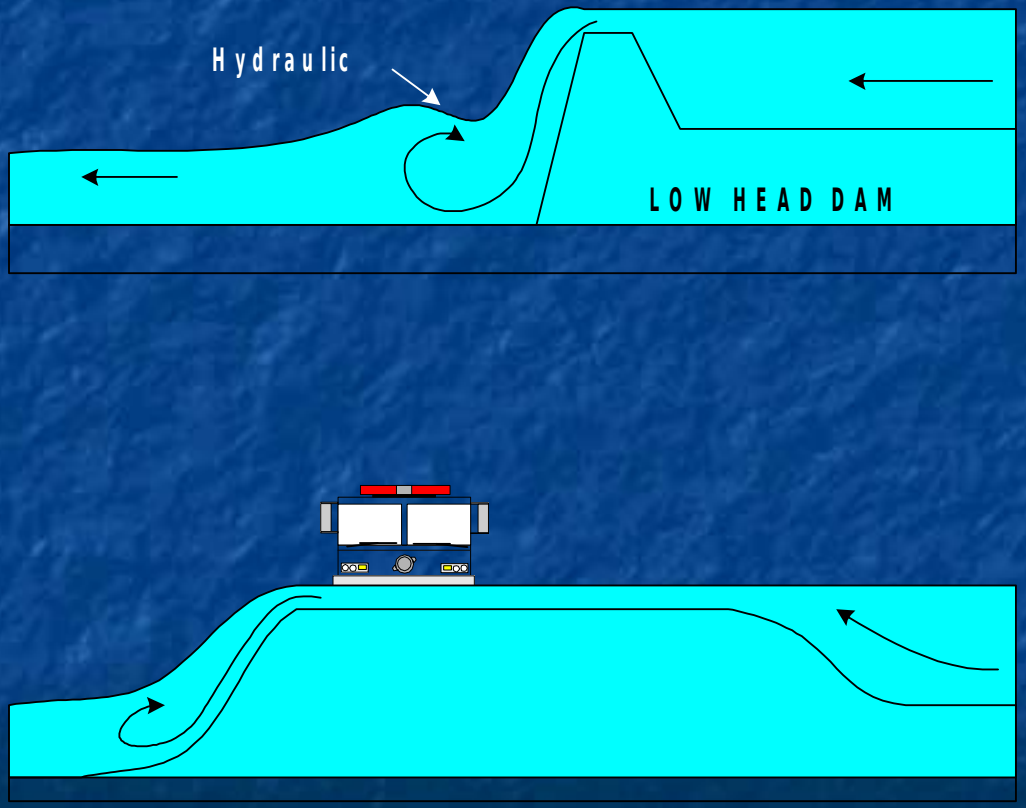
“Terminology of flow”



Current Features



Low Head Dam-Hydraulic



“Hazard Assessment”

- During your size-up, recognizing hazards is vital
- Operate only to your level of training and consider PPE and rescue equipment available

- Some of the hazards that may be encountered are:

- Utilities
- Electrical – Power lines and sheared power poles
- Natural Gas – Roadways may be undermined exposing both main and service lines

- Haz Mat
- Flood waters, vessels or vehicles may contain, Fuel, Pesticides and other Chemicals

- IDLH – Potential engulfment hazard

- Flowing Water
- The force of Flowing water is deceptive
- The wisest action an awareness level responder can make is usually to request specialized resources
- Numerous would –be rescuers drown every year because they fail to assess the hazards of still and moving water

“Utility and Haz Mat”

Consideration

“IDLH & Current Flow”

Don’t drive your Fire Apparatus into the water if…

- You can’t see the road
- The water is moving
- The water is 6” or deeper

“Road Hazards”

May or may not be visible

Would-Be rescuers!

"Delayed Response"

“FORCE OF WATER”

- 3 mph = 33.6 lbs
- 6 mph = 134 lbs
- 9 mph = 302 lbs
- 12 mph = 538 lbs

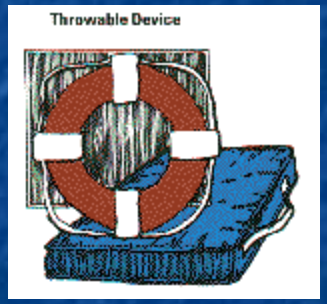
- The flow of some rivers and creeks in the summer = 1-2 mph

- The flow of the same river in the winter = 10-15+ mph

Personal Protection Equipment and Rescue Equipment

Personal Flotation Devices

- **Type I**
  - Less than 15 lbs. of buoyancy
  - Ski belt
- **Type II**
  - Greater than 15.5 lbs. of buoyancy
  - Over the head style
- **Type III**
  - Greater than 34 lbs. of buoyancy, vest style or float coat
  - Keeps you face up in the water
- **Type IV**
  - Throwable devices: Rings, cushions, etc.
- **Type V**
  - Special use devices, Rescue
  - 30-40 lbs. buoyancy

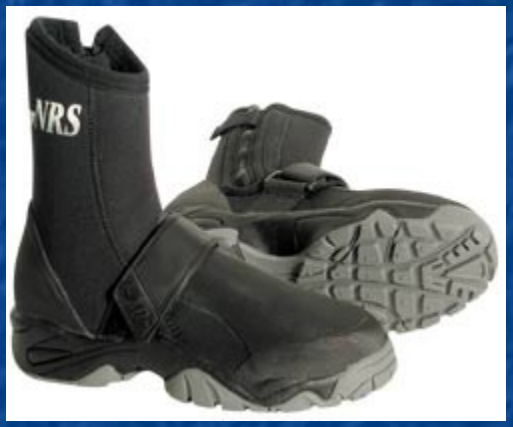


Personal Floatation Device

"PFD"

Personal Protection Equipment

- Gloves, Shoes
- Fins
- Accessories



Personal Protection Equipment

Wet and Dry Suits

Helmets

Rescue Equipment

- "Rescue Boards"
- 120 lbs. +/- flotation
  - River X
  - Carlson

Rescue Equipment

Throw Bags

- 75' of 3/8" high quality floating Polypropylene rope
- 1,200 lb. tensile strength

First-In Considerations

- Initial Actions
- Rescue Plan
- Safety!

Initial Actions

- Establish Incident Command
- Isolate and deny entry, accountability
- Proper PPE (No Turnouts)
- Call for back up, Auto/Mutual Aid, Water Rescue Team
- Assign spotters - Still Water 2 (Triangulate), Swiftwater 1 up stream,
- Develop a Rescue plan, IAP
- Conduct Rescue
- Evaluate

Rescue Plans

The "*Seven Sequential*" rescue methods:

- TALK
- REACH
- THROW
- WADE
- ROW
- GO
- HELO

Always use the fastest, lowest risk and least complex methods during water rescue emergencies

Water Rescue Skills & Techniques

- Talk
- Reach
- Throw
- Wade
- Row
- Go
- Helo

“Talk”

- Direct victim to safety
- Victim may be able to walk, float or swim to shore
- Consider utilizing a P.A. or Mega Phone

“REACH”

Safe operations for rescuer and victim

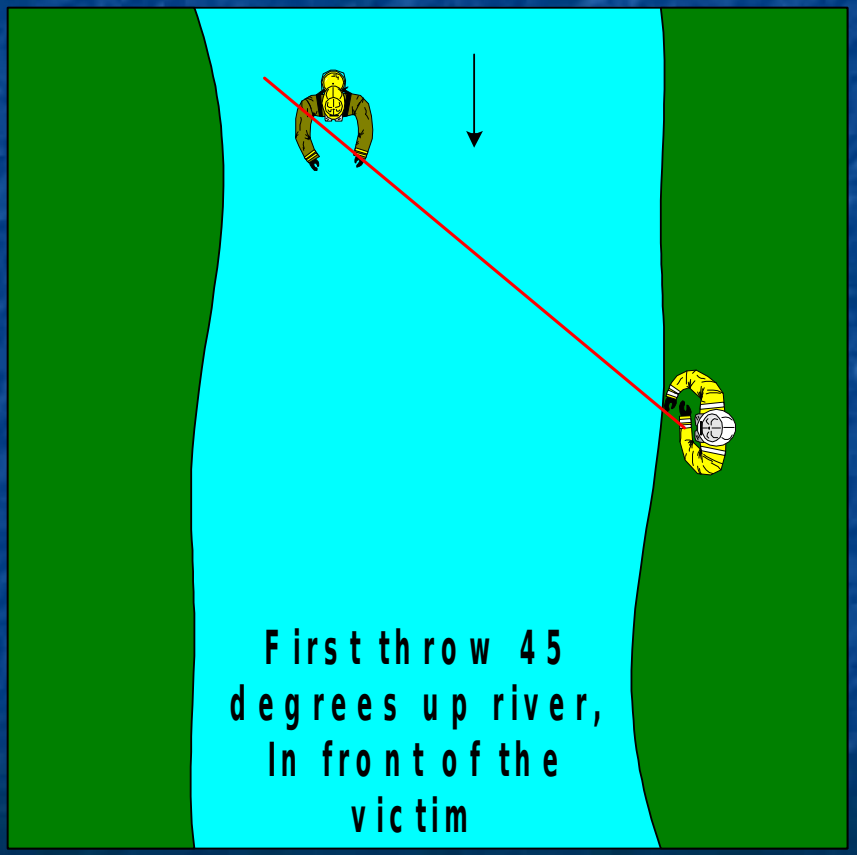
“Reach”

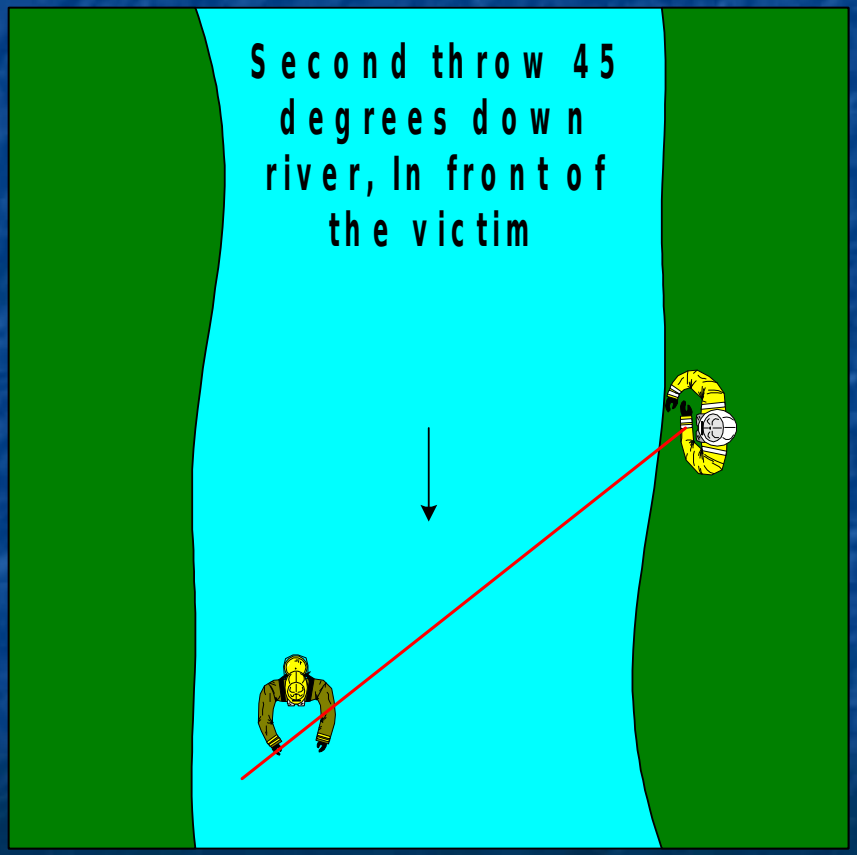
How safe is this operation?

“THROW”

“Throw”

Utilizing Throw Bags

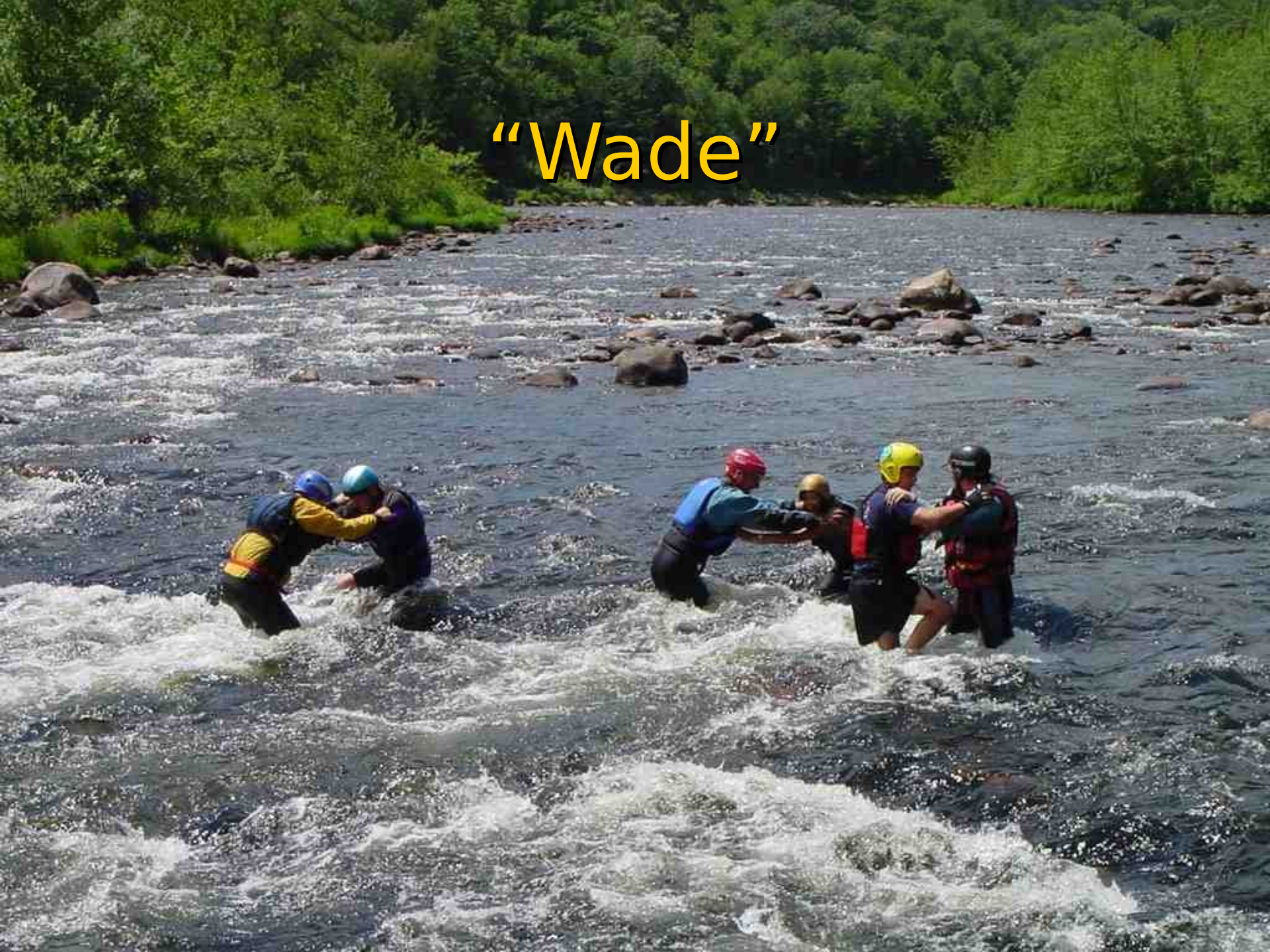




75’ Throw Bag

Perfect Throw

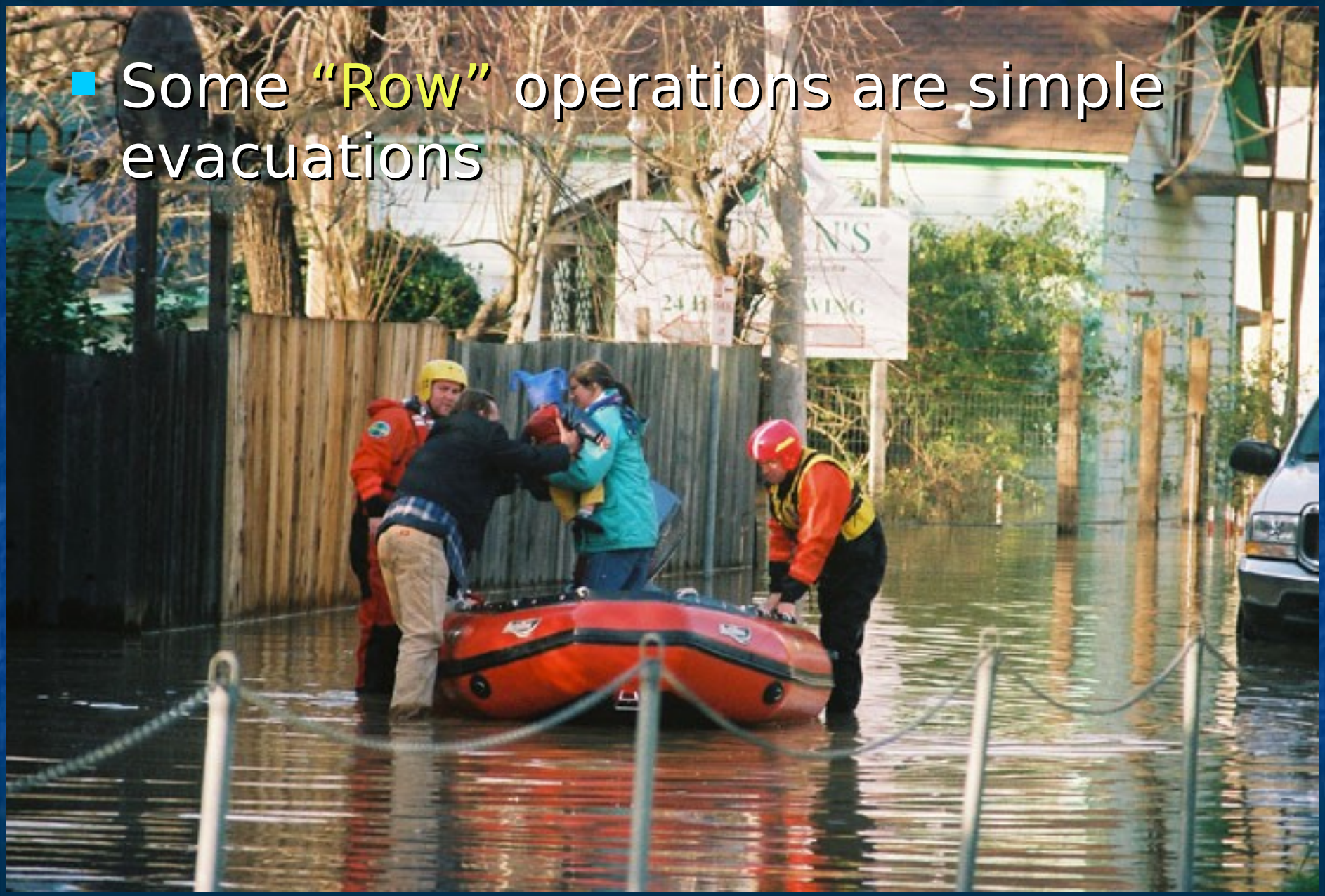
“Wade”


“Wade”

Wading in wate

- Never wade in water unless you have…
  - The proper training
  - The proper PPE
  - Considered Haz Mat
- Always beware of potential foot entrapments

“Foot Entrapment”
Rescue removal technique


Some “Row” operations are simple evacuations

“ROW”

Some are more complex

“ROW”

Utilizing a motorized rescue boat

“ROW”

“GO”

In-Water Rescue

“HELO”

Rescue gone bad!

- Las Vegas, NV Engine Company
- 4 F/F’s rescued by helicopter
- $100,000 damage
- Another reason why we should stop at all red signal lights!

Some rescues require specialized equipment

Rescuer and Victim Safety

- Develop a policy or SOP/SOG
- Locate trouble spots - Preplan
- Obtain the proper equipment
- Obtain training
- Maintain skill proficiency
- Utilize the “*Seven Sequential*” steps
- Remember the “*15 Absolutes*” of water rescue!

The 15 Absolutes of Water Rescue

- Always wear a PFD
- Always deploy spotters
- Priorities are: self-rescue 1st, crew 2nd, victim 3rd
- Have a back up plan
- Always have multiple downsteam safeties
- Always Keep it simple
- Use the right equipment
- Never put your feet down if swept away
- Never count on the victim to assist in the rescue

- Never tie a rope around a rescuer
- Never tie a line across the water at a right angle
- When working from shore, always stand on the upstream side of the rope
- Upon contact with the victim, never lose them
- Do not wear turnouts or fire helmets
- Always be pro-active

Vehicles in the water

- Over 120 people killed every year in the United States by driving their vehicles into the water

A few examples

Successful rescues are based on:

Training
Practice
Experience
Judgment

Don’t count on Luck!

Be Safe

Submit Your Information

Click here when finished viewing the presentation.

Once you enter the information that is requested, the RSC will receive an email indicating your course completion. A member of the RSC will manually update your PDS after that. You will not receive a certificate after you review the presentation.